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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/718,676	11/24/2003	Taisuke Yamauchi	117855	1219

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EXAMINER	
QUARTERMAN, KEVIN J	
ART UNIT	PAPER NUMBER
2879	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/25/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/718,676	YAMAUCHI, TAISUKE	
	Examiner	Art Unit	
	Kevin Quarterman	2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 October 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11 and 14-23* is/are pending in the application.

4a) Of the above claim(s) *12 and 13* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11 and 14-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *24 November 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *0706*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Applicant's amendment and remarks received 31 October 2006 have been entered.

Allowable Subject Matter

2. The indicated allowability of claim 4 is withdrawn in view of the newly discovered reference(s) to Adachi. Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 14-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Yonekubo (US 2004/0108980).

5. The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

6. Regarding independent claim 14, Figure 5 of Yonekubo shows a self-emitting element comprising a display layer (21) that includes a light-emitting element (14); and an output layer (35) that is transparent, is disposed in an emitting direction of the display layer, and includes an angle changer (24) that changes a direction of the light output from the light-emitting element to a direction of the emitting side, wherein a refractive index of the output layer is either almost the same as or greater than a refractive index of the light-emitting element.

7. Regarding claim 15, Figure 5 of Yonekubo shows the angle changer being any one of a micro lens, a micro prism, and a micro mirror.

8. Regarding claim 16, Yonekubo discloses the display layer including a transparent electrode layer, and the transparent electrode layer has a refractive index greater than that of the light-emitting element and sandwiches the light-emitting element (¶s [0035]-[0037]).

9. Regarding claim 17, Figure 4 of Yonekubo shows an anti-reflective layer in an interface between the transparent electrode layer and the output layer.

10. Regarding claim 18, Figure 5 of Yonekubo shows a sealing layer (23) that is transparent and is disposed in an emitting direction of the output layer, wherein a gas (¶ [0039]) that has a refractive index of almost one is filled between the output layer and the sealing layer.

11. Regarding independent claim 19, Figure 5 of Yonekubo shows a display panel comprising a plurality of self-emitting elements that are arranged two-dimensionally in a matrix form, wherein each of the self-emitting elements includes a display layer (21) that

includes a light-emitting element (14); and an output layer (35) that is transparent, is disposed in an emitting direction of the display layer, and includes an angle changer (24) that changes a direction of the light output from the light-emitting element to a direction of the emitting side, wherein a refractive index of the output layer is either almost the same as or greater than a refractive index of the light-emitting element.

12. Regarding independent claim 20, Figures 1 and 5 of Yonekubo show a display apparatus comprising a display panel that includes a plurality of self-emitting elements that are arranged two-dimensionally in a matrix form, wherein each of the self-emitting elements includes a display layer (21) that includes a light-emitting element (14); an output layer (35) that is transparent, is disposed in an emitting direction of the display layer, and includes an angle changer (24) that changes a direction of the light output from the light-emitting element to a direction of the emitting side, wherein a refractive index of the output layer is either almost the same as or greater than a refractive index of the light-emitting element, and a drive unit (9) that drives the display layer of the display panel and displays an image.

13. Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

14. Claims 1-11 and 14-23 are rejected under 35 U.S.C. 102(e) as being anticipated by Adachi (US 7,030,556).

15. Regarding independent claim 1, Figure 1 of Adachi shows a self-emitting element comprising a light-emitting layer (100) that is disposed between electrodes (200, 300)

and that emits light upon applying a voltage between the electrodes; a protective layer (600, 900) that covers an emitting side of the light-emitting layer, forms an interface between the protective layer and an external medium, and has a thickness that allows the light emitted from the light-emitting layer to undergo total reflection at least once at the interface in an area of the light-emitting layer; a reflective layer (300) that covers an opposite side, as viewed from the light-emitting layer, of the protective layer; and an angle changer (700) that is disposed at a periphery of the light-emitting layer, and changes a direction of the light propagating in the protective layer so that the light is incident on the interface at less than a critical angle.

16. Regarding claim 2, Adachi discloses the reflective layer being one of the electrodes (col. 5, ln. 46).

17. Regarding claim 3, Figure 1 of Adachi shows the angle changer being a reflective surface that is inclined so that a space at the emitting side increases.

18. Regarding claim 4, Figure 1 of Adachi shows the angle changer being a refractive surface that is inclined so that a space at the emitting side decreases.

19. Regarding claim 5, Figure 1 of Adachi shows a bank (500) that projects on the emitting side to separate the light-emitting layer from other light-emitting layer, wherein an inner surface of the bank is the angle changer, and the protective layer is formed in an area that is enclosed with the bank.

20. Regarding claim 6, Figure 10 of Adachi shows a bank (500) that projects on the emitting side to separate the light-emitting layer from other light-emitting layer; and a protrusion (30) made of an insulating material that projects toward the emitting side from

the bank, wherein an inner surface of the protrusion is the angle changer, and the protective layer is formed in an area that is enclosed with the protrusion.

21. Regarding claim 7, Adachi discloses the light-emitting layer as an organic electro-luminescent layer (col. 5, ln. 56).

22. Regarding independent claim 8, Figures 1-2 of Adachi show a display panel comprising a plurality of light-emitting layers (100), each of the light-emitting layers being disposed between electrodes (200, 300) and emitting light upon applying a voltage between the electrodes; a protective layer (600, 900) that covers an emitting side of the light-emitting layers, forms an interface between the protective layer and an external medium, and has a thickness that allows the light emitted from the light-emitting layers to undergo total reflection at least once at the interface in an area of the corresponding light-emitting layer; a reflective layer (300) that covers an opposite side, as viewed from the light-emitting layers, of the protective layer; and a plurality of angle changers (700), each of the angle changers being disposed at a periphery of each of the light-emitting layers, that change direction of the light propagating in the protective layer so that the light is incident on the interface at less than a critical angle.

23. Regarding claim 9, Figure 1 of Adachi shows a plurality of banks (500), each of the plurality of banks projecting on the emitting side to separate the light-emitting layers from each other, each of inner surface of the banks being each of the angle changers, and the protective layer being formed in an area that is enclosed with the each of the banks.

24. Regarding claim 10, Figure 1 of Adachi shows a plurality of banks (500), each of the banks projecting on the emitting side to separate the light-emitting layers from each other; and a plurality of protrusions (30) made of an insulating material projecting toward the emitting side from each of the banks, wherein each of inner surfaces of the protrusions is each of the angle changers, and the protective layer is formed in an area that is enclosed with the each of the protrusions.

25. Regarding independent claim 11, Figures 1-2 of Adachi show a display apparatus comprising a display panel includes a plurality of light-emitting layers (100), each of the light-emitting layers being disposed between electrodes (200, 300) and emitting light upon applying a voltage between the electrodes; a protective layer (600, 900) that covers an emitting side of the light-emitting layers, forms an interface between the protective layer and an external medium, and has a thickness that allows the light emitted from the light-emitting layers to undergo total reflection at least once at the interface in an area of the corresponding light-emitting layer; a reflective layer (300) that covers an opposite side, as viewed from the light-emitting layers, of the protective layer; and a plurality of angle changers (700), each of the angle changers being disposed at a periphery of each of the light-emitting layers, that change direction of the light propagating in the protective layer so that the light is incident on the interface at less than a critical angle; and a drive unit (Fig. 7) that drives the light-emitting layers of the display panel and displays an image.

26. Regarding independent claim 14, Figure 1 of Adachi shows a self-emitting element comprising a display layer that includes a light-emitting element (100); and an

output layer (600) that is transparent, is disposed in an emitting direction of the display layer, and includes an angle changer that changes a direction of light output from the light-emitting element to a direction of the emitting side, wherein a refractive index of the output layer is either almost the same as or greater than a refractive index of the light-emitting element.

27. Regarding claim 15, Figure 1 of Adachi shows the angle changer as any one of a micro lens, a micro prism, and a micro mirror.

28. Regarding claim 16, Figure 1 of Adachi shows the display layer including a transparent electrode layer (200), and the transparent electrode layer has a refractive index greater than that of the light-emitting element and sandwiches the light-emitting element.

29. Regarding claim 17, Figure 1 of Adachi shows an anti-reflective layer in an interface between the transparent electrode layer and the output layer.

30. Regarding claim 18, Figure 1 of Adachi shows a sealing layer (900) that is transparent and is disposed in an emitting direction of the output layer, wherein an inert gas (950) that has a refractive index of almost one and is filled between the output layer and the sealing layer.

31. Regarding independent claim 19, Figures 1 and 2 of Adachi show a display panel comprising a plurality of self-emitting elements, wherein each of the self-emitting elements includes a display layer that includes a light-emitting element (100); and an output layer (600) that is transparent, is disposed in an emitting direction of the display layer, and includes an angle changer that changes a direction of light output from the

light-emitting element to a direction of the emitting side, wherein a refractive index of the output layer is either almost the same as or greater than a refractive index of the light-emitting element.

32. Regarding independent claim 20, Figures 1 and 2 of Adachi show a display apparatus comprising a display panel that includes a plurality of self-emitting elements that are arranged two-dimensionally in a matrix form, wherein each of the self-emitting elements includes a display layer that includes a light-emitting element (100); and an output layer (600) that is transparent, is disposed in an emitting direction of the display layer, and includes an angle changer that changes a direction of light output from the light-emitting element to a direction of the emitting side, wherein a refractive index of the output layer is either almost the same as or greater than a refractive index of the light-emitting element; and a drive unit (Fig. 7) that drives the display layer of the display panel and displays an image.

33. Regarding independent claim 21, Figure 1 of Adachi shows a self-emitting element comprising a light-emitting layer (100) that is disposed between electrodes (200, 300) and that emits light upon applying a voltage between the electrodes; a protective layer (600, 900) that covers an emitting side of the light-emitting layer, forms an interface between the protective layer and an external medium, and has a thickness that allows the light emitted from the light-emitting layer to undergo total reflection at least once at the interface in an area of the light-emitting layer; a reflective layer (300) that covers an opposite side, as viewed from the light-emitting layer, of the protective layer; and an angle changer (700) that is disposed at a periphery of the light-emitting

layer, and changes a direction of the light propagating in the protective layer so that the light is incident on the interface at less than a critical angle, wherein a refractive index of the protective layer is either almost the same as or greater than a refractive index of the light-emitting layer.

34. Regarding independent claim 22, Figure 1 of Adachi shows a self-emitting element comprising a display layer that includes a light-emitting element (100); and an output layer (600) that is transparent, is disposed in an emitting direction of the display layer, and includes an angle changer that changes a direction of light output from the light-emitting element to a direction of the emitting side, wherein the angle changer is a micro lens, and a refractive index of the output layer is either almost the same as or greater than a refractive index of the light-emitting element.

35. Regarding independent claim 23, Figure 1 of Adachi shows a self-emitting element comprising a display layer that includes a light-emitting element (100); and an output layer (600) that is transparent, is disposed in an emitting direction of the display layer, and includes an angle changer that changes a direction of light output from the light-emitting element to a direction of the emitting side, wherein the angle changer is a micro prism which changes the direction of the light by refraction, and a refractive index of the output layer is either almost the same as or greater than a refractive index of the light-emitting element.

Conclusion

36. Applicant's submission of an information disclosure statement under 37 CFR 1.97(c) with the fee set forth in 37 CFR 1.17(p) on 03 July 2006 prompted the new

ground(s) of rejection presented in this Office action. In particular, applicant's cited Japanese reference JP 2004-192977 prompted the new grounds of rejection. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 609.04(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

37. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Quarterman whose telephone number is (571) 272-2461. The examiner can normally be reached on M-TH (7-5:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on (571) 272-2457. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kevin Quarterman
Examiner
Art Unit 2879

kq
12 January 2007

MARICELI SANTIAGO
PRIMARY EXAMINER